SEQUENCE LISTING

(1) General Information:

(i) APPLICANT: Harpold, Michael M.
Ellis, Stephen B.
Brust, Paul
Akong, Michael
Velicelebi, Gonul

(ii) TITLE OF INVENTION: HUMAN NEURONAL NICOTINIC ACETYLCHOLINE RECEPTOR COMPOSITIONS AND METHODS

(iii) NUMBER OF SEQUENCES: 12

(iv) CORRESPONDENCE ADDRESS:
(A) ADDRESSEE: Pretty Schroeder Brueggemann & Clark
(B) STREET: 444 South Flower Street, Suite 2000
(C) CITY: Los Angeles
(D) STATE: CA
(E) COUNTRY: USA
(F) ZIP: 90071

(v) COMPUTER READABLE FORM:
(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: PatentIn Release #1.0, Version #1.25

(vi) CURRENT APPLICATION DATA:
(A) APPLICATION NUMBER: US 07/938,154
(B) FILING DATE: 30-NOV-1992
(C) CLASSIFICATION:

(vii) PRIOR APPLICATION DATA:
(A) APPLICATION NUMBER: WO PCT/US91/02311
(B) FILING DATE: 03-APR-1991

(vii) PRIOR APPLICATION DATA:
(A) APPLICATION NUMBER: US 07/504,455
(B) FILING DATE: 03-APR-1990

(viii) ATTORNEY/AGENT INFORMATION:
(A) NAME: Reiter, Stephen E.
(B) REGISTRATION NUMBER: 31,192
(C) REFERENCE/DOCKET NUMBER: P41 9380

(ix) TELECOMMUNICATION INFORMATION:
(A) TELEPHONE: 619-546-4737
(B) TELEFAX: 619-546-9392

(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 195 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: both
(D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:
(A) NAME/KEY: misc_feature
(B) LOCATION: 1..195
(D) OTHER INFORMATION: /note= "Human neuronal NAChR alpha-2 cDNA shown as top sequence of Fig 7A."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

GCTAAACAGG AGTGGAGCGA CTACAAACTG CGCTGGAACC CCGCTGATTT TGGCAACATC 60

ACATCTCTCA GGGTCCCTTC TGAGATGATC TGGATCCCCG ACATTGTTCT CTACAACAAA 120

AATGGGGAGT TTGCAGTGAC CCACATGACC AAGGCCCACC TCTTCTCCAC GGGCACTGTG 180

CACTGGGTGC CCCCC 195

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 209 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: both
(D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:
(A) NAME/KEY: misc_feature
(B) LOCATION: 1..209
(D) OTHER INFORMATION: /note= "Rat neuronal NAChR alpha-2 cDNA shown as the bottom nucleotide sequence in Figure 7A."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

CCAATGTCTG GCTAAAGCAG GAATGGAATG ACTACAAGCT GCGCTGGGAC CCGGCTGAGT 60

TTGGCAATGT CACCTCCCTG CGCGTCCCTT CAGAGATGAT CTGGATCCCA GACATTGTCC 120

TCTACAACAA TGCAGATGGG GAGTTTGCGG TGACCCACAT GACCAAGGCT CACCTCTTCT 180

TCACGGGCAC TGTGCACTGG GTGCCCCCA 209

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 202 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: both
(D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:
(A) NAME/KEY: misc_feature
(B) LOCATION: 1..202
(D) OTHER INFORMATION: /note= "Human neuronal NAChR alpha-2 cDNA shown as top sequence in Fig 7B."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

CCCCTTCGAC CAGCAGAACT GCAAGATGAA GTTTGGCTCC TGGACTTATG ACAAGGCCAA 60

GATCGACCTG GAGCAGATGG AGCAGACTGT GGACCTGAAG GACTACTGGG AGAGCGGCGA 120

GTGGGCCATC GTCAATGCCA CGGGCACCTA CAACAGCAAG AAGTACGACT GCTGCGCCGA 180

GATCTACCCC GACGTCACCT AG 202

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 250 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: both
(D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:
(A) NAME/KEY: misc_feature
(B) LOCATION: 1..250
(D) OTHER INFORMATION: /note= "Rat neuronal NAChR alpha-2 cDNA shown as bottom sequence in Fig 7B."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

CCCCTTCGAC CAGCAGAACT GCAAGATGAA GTTTGGCTCC TGGACATATG ACAAGGCCAA 60

GATCGATCTG GAGCAGATGG AGAGGACAGT GGACCTGAAG GACTACTGGG AGAGTGGCGA 120

GTGGGCCATT ATCAATGCCA CCGGAACCTA TAACAGTAAG AAGTACGACT GCTGCGCGGA 180

GATCTACCCC GATGTCACCT ACTACTTTGT GATCCGGCGG CTGCCGCTGT TCTATACCAT 240

CAACCTCATC 250

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 278 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: both
(D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:
(A) NAME/KEY: misc_feature
(B) LOCATION: 1..278
(D) OTHER INFORMATION: /note= "Human neuronal NAChR alpha-3 cDNA shown as top sequence in Fig 8A."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

CTGGCAGCAG AGGCTGAGCA CCGTCTATTT GAGCGGCTGT TTGAAGATTA CAATGAGATC 60

ATCCGGCCTG TAGCCAACGT GTCTGACCCA GTCATCATCC ATTTCGAGGT GTCCATGTCT 120

CAGCTGGTGA AGGTGGATGA AGTAAACCAG ATCATGGAGA CCAACCTGTG GCTCAAGCAA 180

ATCTGGAATG ACTACAAGCT GAAGTGGAAC CCCTCTGACT ATGGTGGGGC AGAGTTCATG 240

CGTGTCCCTG CACAGAAGAT CTGGAAGCCA GACATTGT 278

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 300 base pairs

(B) TYPE: nucleic acid
(C) STRANDEDNESS: both
(D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:
(A) NAME/KEY: misc_feature
(B) LOCATION: 1..300
(D) OTHER INFORMATION: /note= "Rat neuronal NAChR alpha-3 cDNA shown as bottom sequence of Fig 8A."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

GATGCTGCTG CCAGCGGCCA GTGCCTCAGA AGCTGAGCAC CGCCTGTTCC AGTACCTGTT 60

CGAAGATTAC AACGAGATCA TCCGGCCAGT GGCTAATGTG TCCCATCCAG TCATCATCCA 120

GTTTGAGGTG TCCATGTCTC AGCTGGTGAA GGTGGATGAA GTAAACCAGA TCATGGAAAC 180

CAACCTGTGG CTGAAGCAAA TCTGGAATGA CTACAAGCTG AAATGGAAAC CCTCTGACTA 240

CCAAGGGGTG GAGTTCATGC GTGTTCCTGC AGAGAAGATC TGGAAACCAG ACATCGTACT 300

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 305 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: both
(D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:
(A) NAME/KEY: misc_feature
(B) LOCATION: 1..305
(D) OTHER INFORMATION: /note= "Human neuronal NAChR alpha-3 cDNA shown as top sequence in Fig 8B."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

TTCCAGGTGG ACGACAAGAC CAAAGCCTTA CTCAAGTACA CTGGGGACGT GACTTGGATA 60

CCTCCGGCCA TCTTTAAGAG CTCCTGTAAA ATCGACGTGA CCTACTTCCC GTTTGATTAC 120

CAAAACTGTA CCATGAAGTT CGGTTCCTGG TCCTACGATA AGGCGAAAAT CGATCTGGTC 180

CTGATCGGCT CTTCCATGAA CCTCAAGGAC TATTGGGAGA GCGGCGAGTG GGCCATCATC 240

AAAGCCCCAG GCTACAAACA CGACATCAAG TACAACTGCT GCGAGGAGAT CTACCCCGAC 300

ATCAC 305

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 350 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: both
(D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:
(A) NAME/KEY: misc_feature
(B) LOCATION: 1..350
(D) OTHER INFORMATION: /note= "Rat neuronal NAChR alpha-3 cDNA shown as bottom sequence in Fig 8B."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

GTACAACAAC GCTGATGGGG ATTTCCAGGT GGATGACAAG ACCAAAGCTC TACTCAAGTA 60

CACAGGAGAA GTGACTTGGA TCCCGCCGGC CATCTTTAAG AGCTCATGCA AAATCGACGT 120

GACCTACTTC CCATTCGACT ACCAAAACTG CACCATGAAG TTCGGCTCCT GGTCCTACGA 180

CAAGGCAAAG ATCGACCTGG TCCTCATCGG CTCCTCCATG AACCTCAAGG ACTACTGGGA 240

GAGTGGCGAG TGGGCTATCA TTAAAGCCCC GGGCTACAAA CATGAAATCA AGTACAACTG 300

CTGTGAGGAG ATCTACCAAG ACATCACGTA CTCGCTGTAC ATCCGTCGCC 350

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 1521 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: both
(D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:
(A) NAME/KEY: misc_feature
(B) LOCATION: 1..1521
(D) OTHER INFORMATION: /note= "Human neuronal NAChR beta-2 cDNA shown as top sequence in Fig 9."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

ATGCCCGCTG GCATGGCCCG GCGCTGCGGC CCCGTGGCGC TGCTCCTTGG CTTCGGCCTC 60

CTCCGGCTGT GCTCAGGGGT GTGGGGTACG GATACAGAGG AGCGGCTGGT GGAGCATCTC 120

CTGGATCCTT CCCGCTACAA CAAGCTTATC CGCCCAGCCA CCAATGGCTC TGAGCTGGTG 180

ACAGTACAGC TTATGGTGTC ACTGGCCCAG CTCATCAGTG TGCATGAGCG GGAGCAGATC 240

ATGACCACCA ATGTCTGGCT GACCCAGGAG TGGGAAGATT ATCGCCTCAC CTGGAAGCCT 300

GAAGAGTTTG ACAACATGAA GAAAGTTCGG CTCCCTTCCA AACACATCTG GCTCCCAGAT 360

GTGGTCCTGT ACAACAATGC TGACGGCATG TACGAGGTGT CCTTCTATTC CAATGCCGTG 420

GTCTCCTATG ATGGCAGCAT CTTCTGGCTG CCGCCTGCCA TCTACAAGAG CGCATGCAAG 480
ATTGAAGTAA AGCACTTCCC ATTTGACCAG CAGAACTGCA CCATGAAGTT CCGTTCGTGG 540

ACCTACGACC GCACAGAGAT CGACTTGGTG CTGAAGAGTG AGGTGGCCAG CCTGGACGAC 600

TTCACACCTA GTGGTGAGTG GGACATCGTG GCGCTGCCGG GCCGCGGCAA CGAGAACCCC 660

GACGACTCTA CGTACGTGGA CATCACGTAT GACTTCATCA TTCGCCGCAA GCCGCTCTTC 720

TACACCATCA ACCTCATCAT CCCCTGTGTG CTCATCACCT CGCTAGCCAT CCTTGTCTTC 780

TACCTGCCAT CCGACTGTGG CGAGAAGATG ACGTTGTGCA TCTCAGTGCT GCTGGCGCTC 840

ACGGTCTTCC TGCTGCTCAT CTCCAAGATC GTGCCTCCCA CCTCCCTCGA CGTGCCGCTC 900

GTCGGCAAGT ACCTCATGTT CACCATGGTG CTTGTCACCT TCTCCATCGT CACCAGCGTG 960

TGCGTGCTCA ACGTGCACCA CCGCTCGCCC ACCACGCACA CCATGGCGCC CTGGGTGAAG 1020

GTCGTCTTCC TGGAGAAGCT GCCCGCGCTG CTCTTCATGC AGCAGCCACG CCATCATTGC 1080

GCCCGTCAGC GCCTGCGCCT GCGGCGACGC CAGCGTGAGC GCGAGGGCGC TGGAGCCCTC 1140

TTCTTCCGCG AAGCCCCAGG GGCCGACTCC TGCACGTGCT TCGTCAACCG CGCGTCGGTG 1200

CAGGGGTTGG CCGGGGCCTT CGGGGCTGAG CCTGCACCAG TGGCGGGCCC CGGGCGCTCA 1260

GGGGAGCCGT GTGGCTGTGG CCTCCGGGAG GCGGTGGACG GCGTGCGCTT CATCGCAGAC 1320

CACATGCGGA GCGAGGACGA TGACCAGAGC GTGAGTGAGG ACTGGAAGTA CGTCGCCATG 1380

GTGATCGACC GCCTCTTCCT CTGGATCTTT GTCTTTGTCT GTGTCTTTGG CACCATCGGC 1440

ATGTTCCTGC AGCCTCTCTT CCAGAACTAC ACCACCACCA CCTTCCTCCA CTCAGACCAC 1500

TCAGCCCCCA GCTCCAAGTG A 1521

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 1512 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: both
(D) TOPOLOGY: both

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:
(A) NAME/KEY: misc_feature
(B) LOCATION: 1..1512
(D) OTHER INFORMATION: /note= "Rat neuronal NAChR beta-2 cDNA shown as bottom nucleotide sequence in Figure 9."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

ATGCTGGCTT GCATGGCCGG GCACTCCAAC TCAATGGCGC TGTTCAGCTT CAGCCTTCTT 60

TGGCTGTGCT CAGGGGTTTT GGGAACTGAC ACAGAGGAGC GGCTAGTGGA GCATCTCTTA 120

GATCCCTCCC GCTATAACAA GCTGATTCGT CCAGCTACTA ACGGCTCTGA GCTGGTGACT 180

GTACAGCTCA TGGTATCATT GGCTCAGCTC ATTAGTGTGC ACGAGCGGGA GCAGATCATG 240

ACCACCAATG TCTGGCTGAC CCAGGAGTGG GAAGATTACC GCCTCACATG GAAGCCTGAG 300

GACTTCGACA ATATGAAGAA AGTCCGGCTC CCTTCCAAAC ACATCTGGCT CCCAGATGTG 360

GTTCTATACA ACAATGCTGA CGGCATGTAC GAAGTCTCCT TCTATTCCAA TGCTGTGGTC 420

TCCTATGATG GCAGCATCTT TTGGCTACCA CCTGCCATCT ACAAGAGTGC ATGCAAGATT 480

GAGGTGAAGC ACTTCCCATT TGACCAGCAG AATTGCACCA TGAAGTTTCG CTCATGGACC 540

409
410 TACGACCGTA CTGAGATTGA CCTGGTGCTC AAAAGTGATG TGGCCAGTCT GGATGACTTC 600
411
412 ACACCCAGCG GGGAGTGGGA CATCATCGCA CTGCCAGGCC GACGCAACGA GAACCCAGAC 660
413
414 GACTCCACCT ATGTGGACAT CACCTATGAC TTCATCATTC GTCGCAAACC ACTCTTCTAC 720
415
416 ACTATCAACC TCATCATCCC CTGCGTACTC ATCACCTCGC TGGCCATCCT GGTCTTCTAC 780
417
418 CTGCCCTCAG ACTGTGGTGA AAAGATGACA CTTTGTATTT CTGTGCTGCT AGCACTCACG 840
419
420 GTGTTCCTGC TGCTCATCTC CAAGATTGTG CCTCCCACCT CCCTCGATGT ACCGCTGGTG 900
421
422 GGCAAGTACC TCATGTTTAC CATGGTGCTA GTCACCTTCT CCATCGTCAC CAGCGTGTGT 960
423
424 GTGCTCAATG TGCACCACCG CTCGCCTACC ACGCACACCA TGGCCCCCTG GGTCAAGGTG 1020
425
426 GTCTTCCTGG AGAAGCTGCC CACCCTGCTC TTCCTGCAGC AGCCACGCCA CCGCTGTGCA 1080
427
428 CGTCAGCGTC TGCGCTTGAG GAGGCGCCAG CGAGAGCGTG AGGGCGAGGC GGTTTTCTTC 1140
429
430 CGTGAAGGTC CTGCGGCTGA CCCATGTACC TGCTTTGTCA ACCCTGCATC AGTGCAGGGC 1200
431
432 TTGGCTGGGG CTTTCCGAGC TGAGCCCACT GCAGCCGGCC CGGGGCGCTC TGTGGGGCCA 1260
433
434 TGCAGCTGTG GCCTCCGGGA AGCAGTGGAT GGCGTACGCT TCATTGCGGA CCACATGCGA 1320
435
436 AGTGAGGATG ATGACCAGAG TGTGAGGGAG GACTGGAAAT ACGTTGCCAT GGTGATCGAC 1380
437
438 CGCCTGTTCC TGTGGATCTT TGTCTTTGTC TGTGTCTTTG GGACCGTCGG CATGTTCCTG 1440
439
440 CAGCCTCTCT TCCAGAACTA CACTGCCACT ACCTTCCTCC ACCCTGACCA CTCAGCTCCC 1500
441
442 AGCTCCAAGT GA 1512
443
444 (2) INFORMATION FOR SEQ ID NO:11:
445
446 (i) SEQUENCE CHARACTERISTICS:
447 (A) LENGTH: 21 base pairs
448 (B) TYPE: nucleic acid
449 (C) STRANDEDNESS: single
450 (D) TOPOLOGY: linear
451
452 (ii) MOLECULE TYPE: DNA (genomic)
453
454
455
456 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:
457
458 AGCTTTCGAT ATCAGAATTC G 21
459

460
461 (2) INFORMATION FOR SEQ ID NO:12:
462
463 (i) SEQUENCE CHARACTERISTICS:
464 (A) LENGTH: 21 base pairs
465 (B) TYPE: nucleic acid
466 (C) STRANDEDNESS: single
467 (D) TOPOLOGY: linear
468
469 (ii) MOLECULE TYPE: DNA (genomic)
470
471
472 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:
473
474 AGCTCGAATT CTGATATCGA A 21
475

SEQUENCE VERIFICATION REPORT
PATENT APPLICATION *US/07/938,154*

DATE: 03/08/94
TIME: 12:26:06

INPUT SET: S7462.raw

Line	Error	Original Text

SEQUENCE MISSING ITEM REPORT
PATENT APPLICATION *US/07/938,154*

DATE: 03/08/94
TIME: 12:26:07

INPUT SET: S7462.raw

< < THERE ARE NO ITEMS MISSING > >

SEQUENCE CORRECTION REPORT
PATENT APPLICATION *US/07/938,154*

DATE: 03/08/94
TIME: 12:26:07

INPUT SET: S7462.raw

Line	Original Text	Corrected Text